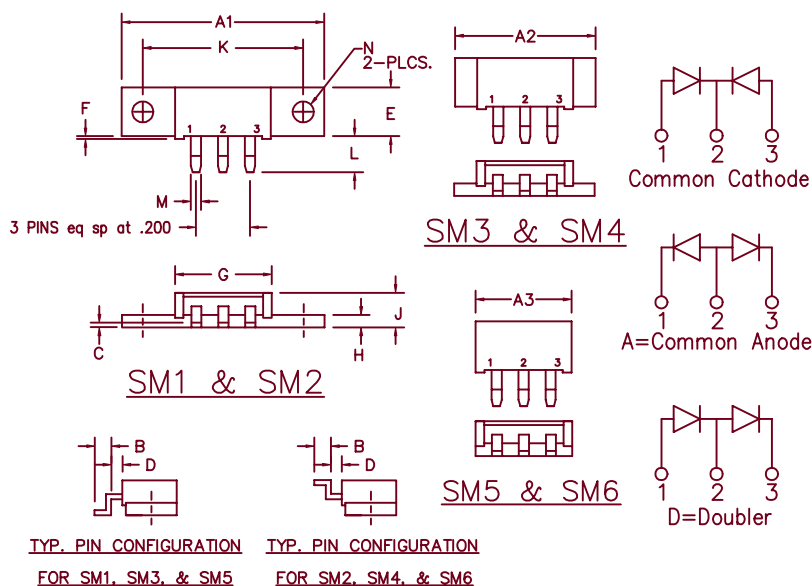


# Schottky Power Surface Mount FST80SM1—SM6 Series



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A1	1.490	1.510	37.85	38.35	
A2	1.020	1.040	26.12	26.42	
A3	.695	.715	17.65	18.16	
B	.110	.120	2.79	3.04	
C	.027	.037	0.69	0.94	
D	.100	.110	2.54	2.79	
E	.350	.370	8.89	9.40	
F	.015	.025	0.38	0.64	
G	.695	.715	17.65	18.16	
H	.088	.098	2.24	2.49	
J	.240	.260	6.10	6.60	
K	1.180	1.195	29.97	30.35	
L	.230	.250	5.84	6.35	
M	.065	.085	1.65	2.16	
N	.151	.161	3.84	4.09	Dia.

Note: Baseplate Common with Pin 2

Microsemi Catalog Catalog Number	Industry Part Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
FST8035SM ①②	81CNQ035ASL 81CNQ035ASM	35V	35V
FST8040SM _ _	81CNQ040ASL 81CNQ040ASM	40V	40V
FST8045SM _ _	81CNQ045ASL 81CNQ045ASM	45V	45V
FST8050SM _ _		50V	50V

Note: ① Specify (1-6) to identify package desired

② Specify C—Common Cathode, A—Common Anode, D—Doubler

- Schottky Barrier Rectifier
- Guard Ring Protection
- 2 X 40 Amperes Avg.
- 175°C Junction Temperature
- Reverse Energy Tested
- $V_{RRM}$  — 35 to 50 Volts

## Electrical Characteristics

Average forward current per pkg	$I_F(AV)$ 80 Amps	$T_C = 145^\circ C$ , Square wave, $R_{\theta JC} = 0.5^\circ C/W$
Average forward current per leg	$I_F(AV)$ 40 Amps	$T_C = 145^\circ C$ , Square wave, $R_{\theta JC} = 1.0^\circ C/W$
Maximum surge current per leg	$I_{FSM}$ 800 Amps	8.3 ms, half sine, $T_J = 175^\circ C$
Max repetitive peak reverse current per leg	$I_R(OV)$ 2 Amps	$f = 1$ KHZ, $25^\circ C$ , 1 usec square wave
Max peak forward voltage per leg	$V_{FM}$ 0.49 volts	$I_{FM} = 40A$ : $T_J = 175^\circ C^*$
Max peak forward voltage per leg	$V_{FM}$ 0.68 volts	$I_{FM} = 40A$ : $T_J = 25^\circ C^*$
Max peak reverse current per leg	$I_{RM}$ 50 mA	$V_{RRM}$ , $T_C = 125^\circ C^*$
Max peak reverse current per leg	$I_{RM}$ 2.0 mA	$V_{RRM}$ , $T_J = 25^\circ C$
Typical junction capacitance per leg	$C_J$ 1900 pF	$V_R = 5.0V$ , $T_C = 25^\circ C$

\*Pulse test: Pulse width 300 usec, Duty cycle 2%

## Thermal and Mechanical Characteristics

Storage temp range	$T_{STG}$	$-55^\circ C$ to $175^\circ C$
Operating junction temp range	$T_J$	$-55^\circ C$ to $175^\circ C$
Max thermal resistance per leg	$R_{\theta JC}$	$1.0^\circ C/W$ Junction to case
Max thermal resistance per pkg.	$R_{\theta JC}$	$0.5^\circ C/W$ Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	$0.3^\circ C/W$ Case to sink
Mounting Base Torque		10 inch pounds maximum (SM1, 2)
Weight		SM1-2 0.3 ounce (8.4 grams) typical
		SM3-4 0.24 ounce (6.7 grams) typical
		SM5-6 0.18 ounce (5.2 grams) typical

# FST80SM1 — FST80SM6

Figure 1  
Typical Forward Characteristics — Per Leg

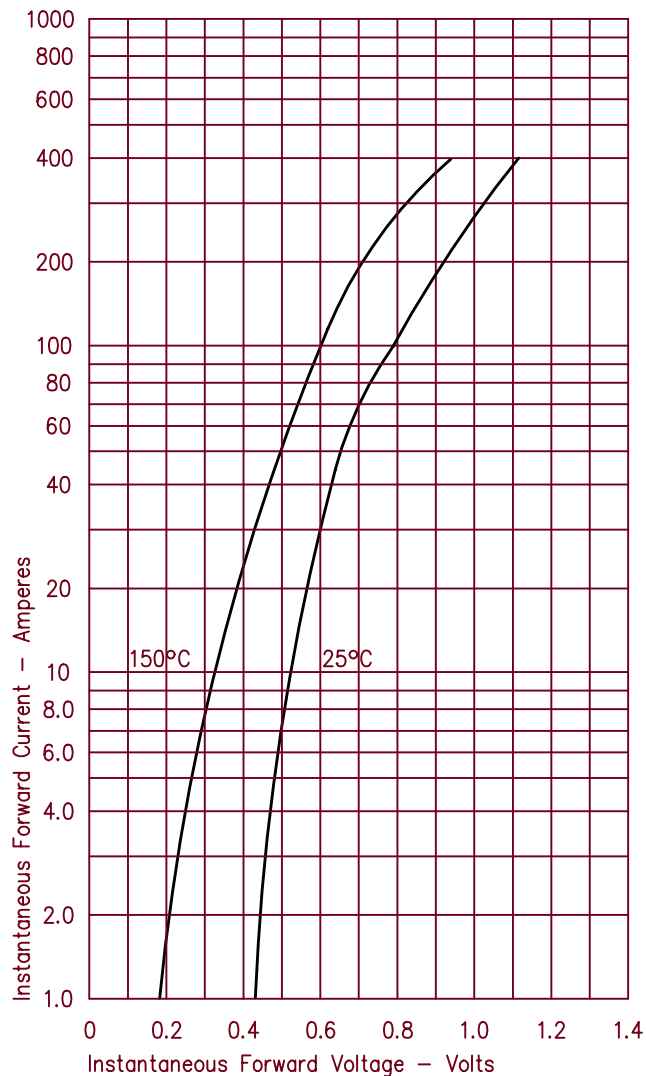


Figure 3  
Typical Junction Capacitance — Per Leg

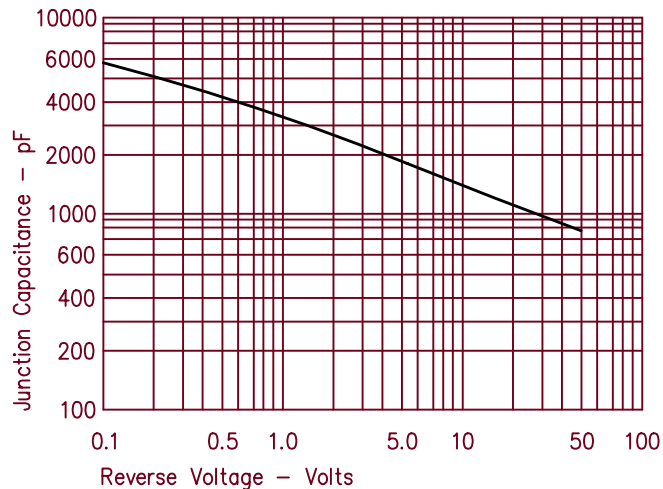


Figure 4  
Forward Current Derating — Per Leg

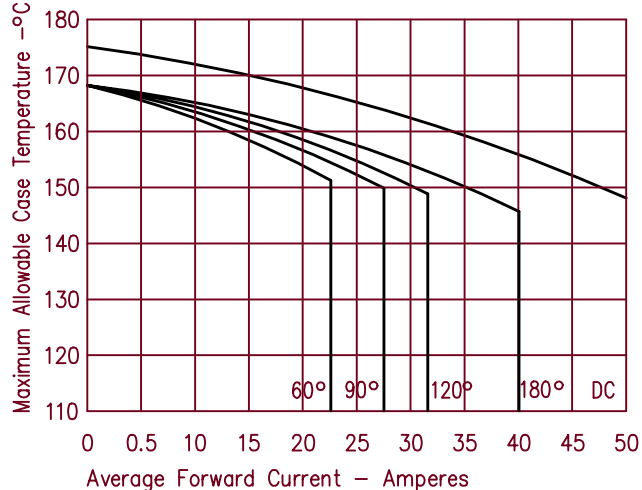


Figure 2  
Typical Reverse Characteristics — Per Leg

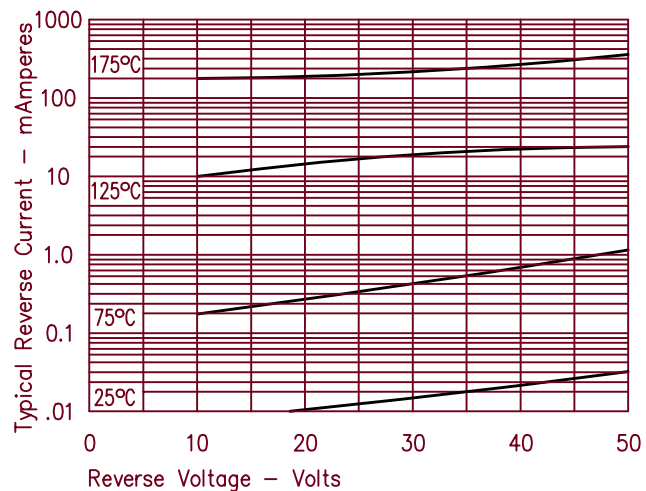


Figure 5  
Maximum Forward Power Dissipation — Per Leg

